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UNION PACIFIC RAILROAD COMPANY

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY  
FCC MAIL BRANCH

Secretary  
Federal Communications Commission  
Washington, D.C. 20554 /

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MAY 27 1993

BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

IN THE MATTER OF:

) P.R. Docket No. 92-235  
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REPLACEMENT OF PART 90 BY  
PART 88 TO REVISE THE  
PRIVATE LAND MOBILE RADIO  
SERVICES AND MODIFY THE  
POLICIES GOVERNING THEM.

MAY 27 1993

FCC MAIL BRANCH  
COMMENTS OF UNION PACIFIC RAILROAD COMPANY  
AND  
MISSOURI PACIFIC RAILROAD COMPANY

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MISSOURI PACIFIC RAILROAD COMPANY

Union Pacific Railroad Company and Missouri Pacific Railroad Company, pursuant to Section 1.415 of the Rules of the Federal Communications Commission (the "Commission"), file these Comments in response to the Commission's Notice of Proposed Rulemaking released November 6, 1992, in the matter of replacement of Part 90 with Part 88.

I. INTRODUCTION

Union Pacific Railroad Company ("UPRR") and Missouri Pacific Railroad Company ("MPRR") (UPRR and MPRR are referred to hereinafter collectively as "Union Pacific") are Class I common carrier railroads<sup>1</sup> subject to the regulatory jurisdiction of the Interstate Commerce Commission and the Federal Railroad Administration of the Department of Transportation. Union Pacific operates approximately 20,000 miles of mainline and branch track in 19 Western, Midwestern, and Southwestern states. In order to

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<sup>1</sup> Class I railroads are those with annual gross revenues in excess of \$96.1 million.

conduct safe and efficient railroad operations over such an extensive system, adequate and reliable mobile radio communications is essential.

Union Pacific has a very significant investment in radio equipment. Union Pacific's radio system consists of approximately 3,522 base stations, 6,000 mobile radios, 3,700 locomotive radios, 15,000 portable radios, and approximately 4,500 radios dedicated to defect notification and "end of train" telemetry operations. The current value of the equipment comprising Union Pacific's radio system, including supporting spares and repair parts, is estimated to be more than \$64 million.

Considering the magnitude of Union Pacific's radio network, the Commission's proposal to modify the channels below 512 MHz and, ultimately, all existing radio equipment, is of great concern to Union Pacific. Although Union Pacific agrees with the intent of the Commission's proposal to reduce congestion in the PLMR services as well as to provide rulemaking which will promote the development and implementation of new technologies for radio applications, it urges the Commission to consider the following modifications to proposed Part 88 as set forth in the Notice of Proposed Rulemaking in P.R. Docket 92-235.

## II. COMMENTS

Union Pacific has reviewed and fully endorses the Comments of the Association of American Railroads ("AAR") in P.R. Docket 92-235. However, Union Pacific wishes to emphasize several points contained in the AAR's Comments:

A. Retain the Railroad Radio Service.

Union Pacific strongly supports the AAR's position to retain the Railroad Radio Service as is, without the Effective Radiated Power ("ERP") restrictions and user loading requirements proposed in the NPRM. Channel exclusivity should be granted to the railroads for those channels currently in the Railroad Radio Service.

B. Retain the AAR as the Sole Coordinator of the Railroad Radio Service.

Because the railroads operate under conditions where the public welfare may be put at risk, the coordinator for the radio channels utilized by the railroads must be familiar with railroad operations. Therefore, due to unique operating conditions and many safety considerations, Union Pacific strongly agrees with the AAR's position to retain the AAR as the sole coordinator for the current Railroad Radio Service.

C. Eliminate the Requirement to Modify Transmitters for Reduced Deviation.

The NPRM proposes the modification of all transmitter equipment to reduce deviation by 1996. Union Pacific agrees with the AAR that the deviation reduction will require a considerable amount of expense, and result in a minimal gain in spectrum efficiency. For this reason, Union Pacific respectfully requests that the Commission eliminate the proposed requirement for deviation reduction and allow the PLMR users to achieve spectrum efficiency in alternate, more cost-effective, ways.

D. Allow the Railroads to Follow an Alternate Migration Timetable.

Union Pacific strongly supports the AAR's migration plan and timetable. The migration plan and timetable proposed in the NPRM will cause the railroads considerable and unnecessary expense in addition to requiring an arguably unsafe migration to the new equipment. Because of the interoperability of all railroads, a migration plan based on urban areas will ultimately require all locomotive and mobile radio equipment to be replaced at nearly the same time. For this reason, Union Pacific believes that the migration timetable must be within the control of the railroads to maximize safety and minimize expense.

E. Authorize an "Off-set Overlay" in the Railroad Radio Service.

Union Pacific and other railroads are currently experiencing congestion in many cities across the country. Union Pacific appreciates the Commission's recognition of this problem, but believes the migration path proposed in the NPRM to relieve this congestion will create numerous interoperational problems and result in otherwise unnecessary implementation expenses. The interoperational problems translate directly into safety-related concerns which the railroads and the general public should not have to tolerate.

Union Pacific believes that the AAR has developed a solution to the VHF migration issue which will meet the Commission's spectrum efficiency goals and still provide "seamless" communications as radio equipment is upgraded over the coming

years. Union Pacific requests that the Commission rechannelize the VHF band utilized by the railroads for 12.5kHz equipment on 7.5kHz channel centers. This will recreate the channel offset condition currently in operation in the VHF band.

Although the rechannelization of the VHF band may do nothing to eliminate adjacent channel interference, it does have several inherent positive points. First, systems in rural areas may continue to operate with existing equipment until congestion issues justify equipment replacement. Second, additional channels will be available approximately ten years prior to the channel availability derived from migration to very narrow band technologies. Finally, rechannelization will not require the current channel frequencies to shift to new channel frequencies as suggested by the Land Mobile Communications Council. Reference is made to Exhibit 1 for a diagram depicting the new offset plan.

### III. ADDITIONAL SPECTRUM ALLOCATION FOR VERY NARROW BAND EQUIPMENT.

Union Pacific is familiar with the ongoing debate between manufacturers that produce 5kHz equipment and those that would prefer 6.25kHz equipment as the very narrow band selection. There is yet another group of users and suppliers that would rather see 12.5kHz as the minimum channel bandwidth. Union Pacific also understands that there are multiple types of users, and that a single channel bandwidth or a single channel plan for all users may be unrealistic. There are many smaller users whose main concern is to have a single voice channel available to conduct their businesses, e.g., such as in construction or small business



ventures. There is also a need for very complex, voice plus data radio networks which major users like Union Pacific require for further development of safe and efficient operations.

The common opinion among manufacturers and major users is that the very narrow band equipment will be difficult to implement in congested areas. These very narrow band systems ultimately require "clean spectrum" in order to maximize the operational quality of equipment used. This has already been set into motion in the 220MHz band which has been dedicated to the development of 5kHz radio equipment.

Union Pacific strongly believes that the Commission should reevaluate the need for the very narrow band channel plans in 1999 by means of a Further Notice of Proposed Rulemaking. Also, at that time the utilization of the 220MHz band could be used as a measurement device to determine the additional amount of spectrum which would be required to satisfy the smaller systems requiring only voice communications in the current PLMR bands. Once a "feel" for the magnitude of simple voice systems has been obtained, the Commission would then have data which could be used to assist in obtaining additional spectrum from the Government Band.

This new spectrum would then be channelized much like the 220MHz band as "clean spectrum". As the smaller systems transfer to the new bands, the existing spectrum in the PLMR services would then be able to support additional higher density communications systems. In all cases, the Commission's goal of moving the PLMR users to more spectrum efficient systems would be preserved.

During the manufacturer's round table discussion held at the Commission on May 6, 1993, the Commission's Ralph Haller made the suggestion of obtaining "green space" for additional development of very narrow band equipment. Union Pacific applauds Mr. Haller's gesture to solve as many user problems as possible by suggesting a new block of spectrum dedicated to the very narrow band technologies. His suggestion demonstrates the Commission's intent to solve radio communications problems for the PLMR users, while avoiding the possible disruption of the current PLMR radio networks.

#### IV. SUMMARY

Union Pacific agrees with and supports the Commission's intent to reduce the congestion currently being experienced in the PLMR bands. Union Pacific also supports the Commission's goal of allowing advanced technologies in the PLMR bands to promote and enhance spectrum-efficient technologies. However, Union Pacific urges the Commission to allow the railroads to achieve the much needed spectrum efficiency in the manner outlined in these Comments, and as more fully developed in the Comments of the AAR.

Union Pacific has an investment in radio equipment totaling more than \$64 million. If the Commission were to implement the proposed rules in the NPRM, the total cost to Union Pacific would exceed \$200 million.

In comparison, if the Commission allows the migration to more spectrum-efficient technologies to be in the control of the railroads as suggested by the AAR, Union Pacific and other members

of the AAR, the resulting cost to Union Pacific would be approximately \$60 million. This translates to a net cost avoidance of approximately 70%. Other railroads would experience similar migration cost reductions. The results would be significant: (1) the Commission will achieve its goal of greater spectrum efficiency; (2) the railroads will obtain significant relief from the

# VHF Migration

## AAR Offset Overlay

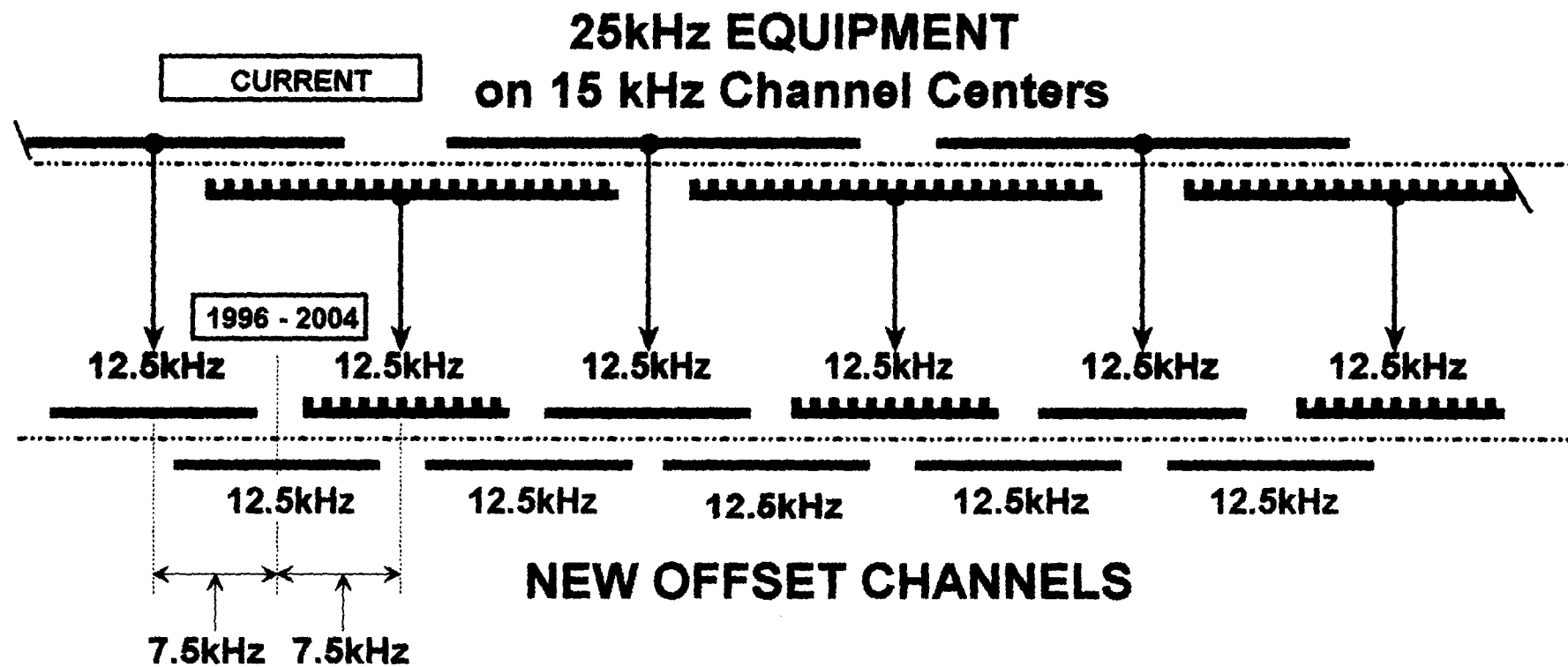


Exhibit 1.

VERIFICATION

STATE OF NEBRASKA )